

FOJA 18,823
09/902,839In the Claims:

Please amend the claims as follows:

1. (presently amended) A packet switch apparatus sending a packet stored in a common memory to a plurality of paths having different bit rates, comprising:

storing means for storing a packet to be sent to at least one path in a free space of the common memory;

enqueueing means for enqueueing a pointer indicating said packet stored in the ~~shared~~ common memory to queues corresponding to paths to which said packet is scheduled to be sent;

sending means for dequeuing the pointer enqueued by said enqueueing means for each of the queues corresponding to the paths and sending the packet indicated by the pointer dequeued to the paths corresponding to the queues at the respective transmission bit rate thereof;

discarding means for discarding, on a queue basis, pointers from a head thereof in which it is determined that the number of pointers enqueued by said enqueueing means exceeds a predetermined threshold value; and

free-address management means for setting the free space of the common memory that is occupied by the packet to a busy state and changing the free space that is now in the busy state to a free state when the pointer indicating said packet is dequeued or discarded from all of the queues to which said packet is scheduled to be sent.

2. (original) The packet switch apparatus according to claim 1, wherein said sending means comprises schedulers provided to the respective paths, said schedulers dequeuing the pointer enqueued by said enqueueing means.

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3. (original) The packet switch apparatus according to claim 1, wherein the paths include a virtual path to which an arbitrary output bit rate based on an ensured band is designated.

4. (original) The packet switch apparatus according to claim 1, wherein said discarding means sets a discard initiation threshold value for each of the queues, and starts to discard pointers from one of the queues if the number of pointers enqueued to said one of the queues exceeds said discard initiation threshold value.

5. (original) The packet switch apparatus according to claim 4, wherein said discarding means sets a discard end threshold value for each of the queues, and continues to discard pointers until the number of pointers enqueued to each of the queues becomes equal to or smaller than the discard end threshold value.

6. (original) The packet switch apparatus according to claim 1, wherein said free-address management means manages status of enqueueing and dequeuing of pointers on the path basis by using a set of flags that is provided for each address of the common memory, the flags respectively corresponding to the paths.

7. (original) The packet switch apparatus according to claim 1, wherein said free-address management means returns the address of the free space to the free state when said free-address management means turns ON all of the set of flags related to each of the paths, said all of the set of flags including a flag related to a path to which said packet is not scheduled to be sent, a flag related to a path to which said packet has been sent, and a flag related to a path in which the pointer indicating said packet has been discarded.

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8. (presently amended) A multicasting method of sending a packet stored in a common memory to a plurality of paths having different bit rates, comprising the steps of:

storing a packet to be sent to at least one path in a free space of the common memory;

enqueueing a pointer indicating said packet stored in the ~~shared~~-common memory to queues corresponding to paths to which said packet is scheduled to be sent;

dequeueing the pointer enqueueed for each of the queues corresponding to the paths and sending the packet indicated by the pointer dequeueed to the paths corresponding to the queues at the respective transmission bit rate thereof;

discarding, on a queue basis, pointers from a head thereof in which it is determined that the number of pointers enqueueed exceeds a predetermined threshold value; and

setting the free space of the common memory that is occupied by the packet to a busy state and changing the free space that is now in the busy state to a free space when the pointer indicating said packet is dequeueed or discarded from all of the queues to which said packet is scheduled to be sent.

9. (original) The multicasting method according to claim 8, wherein the step of dequeueing said pointer dequeueing the pointer enqueueed uses schedulers respectively provided to the paths.

10. (original) The multicasting method according to claim 8, wherein the paths include a virtual path to which an arbitrary output bit rate based on an ensured band is designated.

11. (original) The multicasting method according to claim 8, wherein the step of discarding pointers starts to discard pointers from one of the queues if the number of pointers enqueueed to said one of the queues exceeds a discard initiation threshold value defined for each of the queues.

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12. (original) The multicasting method according to claim 11, wherein said step of discarding pointers comprises a step of setting a discard end threshold value for each of the queues, and continuing to discard pointers until the number of pointers enqueued to each of the queues becomes equal to or smaller than the discard end threshold value.

13. (original) The multicasting method according to claim 8, wherein the step of setting an address comprises a step of managing status of enqueueing and dequeuing of pointers on the path basis by using a set of flags that is provided for each address of the common memory, the flags respectively corresponding to the paths.

14. (original) The multicasting method according to claim 8, wherein the step of setting an address comprises a step of returning the address of the free space to the free state when turning ON all of the set of flags related to each of the paths, said all of the set of flags including a flag related to a path to which said packet is not scheduled to be sent, a flag related to a path to which said packet has been sent, and a flag related to a path in which the pointer indicating said packet has been discarded.